SEQUENCE LISTING

<110> Cambridge Antibody Technology
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Pope, Anthony
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Jackson, Ronald
Holliger, Kasper
Marks, James
Clackson, Timothy
Chiswell, David
Winter, Gregory
Bonert, Timothy

<120> Methods for Producing Members of Specific Binding Pairs

<130> 13839-00013

<140> US 09/726,219
<141> 2000-11-28

<150> GB 9015198.6
<151> 1990-07-10

<150> GB 9022845.3
<151> 1990-10-19

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<150> GB 9024503.6
<151> 1990-11-12

<150> GB 9104744.9
<151> 1991-03-06

<150> GB 9110549.4
<151> 1991-05-15

<150> PCT/GB91/01134
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<150> US 07/971,857
<151> 1993-01-08

<150> US 08/484,893
<151> 1995-06-07

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<170> PatentIn version 3.1

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gagtcattct cgacttgcgg ccgcacgttt gatctccacc ttggtccc 48

<210> 114
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 114
gagtcattct cgacttgcgg ccgcacgttt aatctccagt cgtgtccc 48

<210> 115
<211> 24
<212> DNA

<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 115
agactctccc ctgttgaagc tctt 24

<210> 116
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 116
gagtcattct cgacttgcgg ccgcttatta agactctccc ctgttgaagc tctt 54

<210> 117
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 117
gagtcattct cgacttgcgg ccgcagactc tcccctgttg aagctctt 48

<210> 118
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 118
cagtctgtdt tgacgcagcc gcc 23

<210> 119
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 119
cagtctgccc tgactcagcc tgc 23

<210> 120
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 120
tcctatgtgc tgactcagcc acc 23

<210> 121
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 121
tcttctgagc tgactcagga ccc 23

<210> 122
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 122
cacgttatac tgactcaacc gcc 23

<210> 123
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 123
caggctgtgc tcactcagcc gtc 23

<210> 124
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 124

aattttatgc tgactcagcc cca 23

<210> 125
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 125
acctaggacg gtgaccttgg tccc 24

<210> 126
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 126
acctaggacg gtcagcttgg tccc 24

<210> 127
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 127
acctaaaacg gtgagctggg tccc 24

<210> 128
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 128
gagtcattct cgacttgcgg ccgcacctag gacggtgacc ttggtccc 48

<210> 129
<211> 48
<212> DNA
<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 129
gagtcattct cgacttgcgg ccgcacctag gacggtcagc ttggtccc 48

<210> 130
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 130
gagtcattct cgacttgcgg ccgcacytaa aacggtgagc tgggtccc 48

<210> 131
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 131
tgaagattct gtaggggcca ctgtctt 27

<210> 132
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 132
gagtcattct cgacttgcgg ccgcttatta tgaagattct gtaggggcca ctgtctt 57

<210> 133
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 133
gagtcattct cgacttgcgg ccgctgcaga ttctgtaggg gctgtctt 48

<210> 134
<211> 28
<212> DNA

<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 134
gcaccctggt caccgtctcc tcaggtgg 28

<210> 135
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 135
ggacaatggt caccgtctct tcaggtgg 28

<210> 136
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 136
gaaccctggt caccgtctcc tcaggtgg 28

<210> 137
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 137
ggaccacggt caccgtctcc tcaggtgc 28

<210> 138
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 138
aagcccagca acaccaaggt ggac 24

<210> 139
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 139
ggagactggg tcatctggat gtccgatccg cc 32

<210> 140
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 140
ggagactgag tcatcacaac atccgatccg cc 32

<210> 141
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 141
ggagactgcg tcaacacaat ttccgatccg cc 32

<210> 142
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 142
ggagactggg tcatcacgat gtccgatccg cc 32

<210> 143
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 143

ggagactgcg tgagtgtcgt ttccgatccg cc 32

<210> 144
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 144
ggagactgag tcagcacaat ttccgatccg cc 32

<210> 145
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 145
ggagactggg tcatctggat gtcggccatc gctgg 35

<210> 146
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 146
ggagactgcg tcatcacaac atcggccatc gctgg 35

<210> 147
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 147
ggagactgcg tcaacacaat ttcggccatc gctgg 35

<210> 148
<211> 35
<212> DNA
<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 148
ggagactggg tcatcacgat gtcggccatc gctgg 35

<210> 149
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 149
ggagactgcg tgagtgtcgt ttcggccatc gctgg 35

<210> 150
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 150
ggagactgcg tcagcacaat ttcggccatc gctgg 35

<210> 151
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 151
ggcggctgcg tcaacacaga ctgcgatccg ccaccgccag ag 42

<210> 152
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 152
gcaggctgag tcagagcaga ctgcgatccg ccaccgccag ag 42

<210> 153
<211> 42
<212> DNA

<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 153
ggtggctgag tcagcacata ggacgatccg ccaccgccag ag 42

<210> 154
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 154
gggtcctgag tcagctcaga agacgatccg ccaccgccag ag 42

<210> 155
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 155
ggcggttgag tcagtataac gtgcgatccg ccaccgccag ag 42

<210> 156
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 156
gacggctgag tcagcacaga ctgcgatccg ccaccgccag ag 42

<210> 157
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 157
tggggctgag tcagcataaa attcgatccg ccaccgccag ag 42

<210> 158
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 158
ggcggctgcg tcaacacaga ctgggccatc gctggttggg ca 42

<210> 159
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 159
gcaggctgag tcagagcaga ctgggccatc gctggttggg ca 42

<210> 160
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 160
ggtggctgag tcagcacata ggaggccatc gctggttggg ca 42

<210> 161
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 161
gggtcctgag tcagctcaga agaggccatc gctggttggg ca 42

<210> 162
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 162

ggcggttgag tcagtataac gtgggccatc gctggttggg ca 42

<210> 163
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 163
gacggctgag tcagcacaga ctgggccatc gctggttggg ca 42

<210> 164
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 164
tggggctgag tcagcataaa attggccatc gctggttggg ca 42

<210> 165
<211> 118
<212> PRT
<213> Homo sapiens

<400> 165

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Lys Tyr Ala Gln Lys Ile
50 55 60

Gln Gly Arg Val Thr Met Ile Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Val Arg Leu Leu Pro Lys Arg Thr Ala Thr Leu His Tyr Tyr Ile Asp
100 105 110

Val Trp Gly Lys Gly Thr
115

<210> 166
<211> 65
<212> PRT
<213> Homo sapiens

<400> 166

Asn Asn Tyr Val Ser Trp Tyr Gln His Leu Pro Gly Thr Ala Pro Asn
1 5 10 15

Leu Leu Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg
20 25 30

Phe Ser Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly
35 40 45

Leu Gln Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Ile Trp Asp Gly
50 55 60

Arg
65

<210> 167
<211> 115
<212> PRT
<213> Homo sapiens

<400> 167

Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Lys Thr Gly Tyr Ser Ser Gly Trp Gly Tyr Phe Asp Tyr Trp Gly
100 105 110

Gln Gly Thr
115

<210> 168
<211> 101
<212> PRT
<213> Homo sapiens

<400> 168

Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
1 5 10 15

Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Ser Gly Asn His
85 90 95

Val Val Phe Gly Gly
100

<210> 169
<211> 100
<212> PRT
<213> Homo sapiens

<400> 169

Ser Leu Thr Cys Ser Val Ser Gly Asp Ser Ile Ser Ser Gly Gly Tyr
1 5 10 15

Ser Trp Ile Arg Gln Pro Ser Gly Lys Gly Ile Glu Trp Ile Gly Ser
20 25 30

Val His His Ser Gly Pro Thr Tyr Tyr Asn Pro Ser Leu Lys Ser Arg
35 40 45

Val Thr Met Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys Ile
50 55 60

Lys Cys Ser Val Thr Ala Ala Asp Thr Ala Met Tyr Phe Cys Ala Arg
65 70 75 80

Glu Gly Gly Ser Thr Trp Arg Ser Leu Tyr Lys His Tyr Tyr Met Asp
85 90 95

Val Trp Gly Lys
100

<210> 170
<211> 111
<212> PRT
<213> Homo sapiens

<400> 170

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15

Thr Leu Ser Leu Val Cys Thr Val Ser Gly Gly Ser Leu Ser Phe Ser
20 25 30

Tyr Trp Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Ser His Arg Gly Thr Asp Tyr Asn Ser Ser Leu Gln Ser
50 55 60

Arg Val Thr Ile Ser Ala Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys
65 70 75 80

Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
85 90 95

Ser Phe Ser Asn Ser Phe Phe Phe Gly Tyr Trp Gly Gln Gly Thr
100 105 110

<210> 171
<211> 111
<212> PRT
<213> Homo sapiens

<400> 171

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Gln
1 5 10 15

Ser Leu Met Ile Ser Cys Gln Gly Ser Gly Tyr Ser Phe Ser Asn Tyr
20 25 30

Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
35 40 45

Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser Pro Ser Phe
50 55 60

Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
65 70 75 80

Leu His Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Arg Leu Val Gly Gly Thr Pro Ala Tyr Trp Gly Gln Gly Thr
100 105 110

<210> 172
<211> 88
<212> PRT
<213> Homo sapiens

<400> 172

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Gln
1 5 10 15

Ser Leu Arg Ile Ser Cys Lys Gly Ala Gly Tyr Ser Phe Ser Thr Tyr
20 25 30

```
Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
        35                  40                  45

Gly Ile Ile Tyr Pro Asp Asp Ser Asp Thr Arg Tyr Ser Pro Ser Phe
    50                  55                  60

Glu Gly Gln Val Thr Ile Ser Val Asp Lys Ser Ile Thr Thr Ala Tyr
65                  70                  75                  80

Leu Trp Trp Ser Ser Leu Lys Ala
                85
```

<210> 173
<211> 102
<212> PRT
<213> Homo sapiens

<400> 173

```
Glu Ile Val Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Tyr
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Thr Ile Ile Ser Phe Pro
                85                  90                  95

Leu Thr Phe Gly Gly Gly
            100
```

<210> 174
<211> 102
<212> PRT
<213> Homo sapiens

<400> 174

Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Phe Gly Gln
1 5 10 15

Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Ser Ser Tyr Ala
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Leu Leu Val Ile Tyr
35 40 45

Gly Glu Asn Ser Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Arg Gly Thr His
85 90 95

Leu Glu Val Phe Gly Gly
100

<210> 175
<211> 103
<212> PRT
<213> Homo sapiens

<400> 175

His Val Ile Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15

Ser Ile Thr Ile Ser Cys Thr Gly Ser Ser Arg Asp Val Gly Gly Tyr
20 25 30

Asn Tyr Val Ser Trp Tyr Gln His His Pro Gly Lys Ala Pro Lys Leu
35 40 45

Leu Ile Ser Glu Val Thr Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ala Ser Tyr Thr Ser Ser
85 90 95

Lys Thr Tyr Val Phe Gly Gly
100

<210> 176
<211> 94
<212> PRT
<213> Homo sapiens

<400> 176

Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15

Ser Ile Thr Ile Ser Cys Ser Gly Ser Ser Ser Asp Ile Gly Arg Tyr
20 25 30

Asp Tyr Val Ser Trp Tyr Gln His Tyr Pro Asp Lys Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Glu Val Val His Arg Pro Ser Gly Ile Ser His Arg Phe
50 55 60

Ser Ala Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Glu Leu
65 70 75 80

Gln Pro Gly Asp Glu Ala Asp Tyr Tyr Cys Ala Ser Tyr Thr
85 90

<210> 177
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide for mutagenesis

<400> 177
acaactttca acagttgagg agacggtgac cgtaagcttc tgcagttgga cctgagcgga 60

gtgagaata 69

<210> 178
<211> 51
<212> DNA

<213> Artificial Sequence

<220>
<223> oligonucleotide for mutagenesis

<400> 178
acaactttca acagtttccc gtttgatctc gagctcctgc agttggacct g 51

<210> 179
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> sequencing primer

<400> 179
gtcgtctttc cagacgttag t 21

<210> 180
<211> 26
<212> DNA
<213> Bacteriophage fd

<400> 180
tctcactccg ctgaaactgt tgaaag 26

<210> 181
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered insertion site for VH

<400> 181
tctcactccg ctcaggtcca actgcagaag cttacggtca ccgtctcctc aactgttgaa 60

ag 62

<210> 182
<211> 59
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered insertion site for Fv

<400> 182
tctcactccg ctcaggtcca actgcaggag ctcgagatca aacgggaaac tgttgaaag 59

<210> 183

<211> 272
<212> PRT
<213> Artificial Sequence

<220>
<223> scFv of genetically engineered anti-hen egg-white lysozyme (HEL) monoclonal antibody D1.3

<400> 183

Met Lys Tyr Leu Leu Pro Thr Ala Ala Ala Gly Leu Leu Leu Leu Ala
1 5 10 15

Ala Gln Pro Ala Met Ala Gln Val Gln Leu Gln Glu Ser Gly Pro Gly
20 25 30

Leu Val Ala Pro Ser Gln Ser Leu Ser Ile Thr Cys Thr Val Ser Gly
35 40 45

Phe Ser Leu Thr Gly Tyr Gly Val Asn Trp Val Arg Gln Pro Pro Gly
50 55 60

Lys Gly Leu Glu Trp Leu Gly Met Ile Trp Gly Asp Gly Asn Thr Asp
65 70 75 80

Tyr Asn Ser Ala Leu Lys Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser
85 90 95

Lys Ser Gln Val Phe Leu Lys Met Asn Ser Leu His Thr Asp Asp Thr
100 105 110

Ala Arg Tyr Tyr Cys Ala Arg Glu Arg Asp Tyr Arg Leu Asp Tyr Trp
115 120 125

Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
130 135 140

Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Glu Leu Thr Gln Ser
145 150 155 160

Pro Ala Ser Leu Ser Ala Ser Val Gly Glu Thr Val Thr Ile Thr Cys
165 170 175

Arg Ala Ser Gly Asn Ile His Asn Tyr Leu Ala Trp Tyr Gln Gln Lys
180 185 190

```
Gln Gly Lys Ser Pro Gln Leu Leu Val Tyr Tyr Thr Thr Thr Leu Ala
        195                 200                 205

Asp Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Gln Tyr
    210                 215                 220

Ser Leu Lys Ile Asn Ser Leu Gln Pro Glu Asp Phe Gly Ser Tyr Tyr
225                 230                 235                 240

Cys Gln His Phe Trp Ser Thr Pro Arg Thr Phe Gly Gly Gly Thr Lys
                245                 250                 255

Leu Glu Ile Lys Arg Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn
            260                 265                 270
```

<210> 184
<211> 889
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence encoding scFv of genetically engineered anti-hen egg-white lysozyme (HEL) monoclonal antibody D1.3 and surroun ding sequence

<400> 184

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gcatgcaaat tctatttcaa ggagacagtc ataatgaaat acctattgcc tacggcagcc     60

gctggattgt tattactcgc tgcccaacca gcgatggccc aggtgcagct gcaggagtca    120

ggacctggcc tggtggcgcc ctcacagagc ctgtccatca catgcaccgt ctcagggttc    180

tcattaaccg gctatggtgt aaactgggtt cgccagcctc caggaaaggg tctggagtgg    240

ctgggaatga tttggggtga tggaaacaca gactataatt cagctctcaa atccagactg    300

agcatcagca aggacaactc caagagccaa gttttcttaa aaatgaacag tctgcacact    360

gatgacacag ccaggtacta ctgtgccaga gagagagatt ataggcttga ctactggggc    420

caaggcacca cggtcaccgt ctcctcaggt ggaggcggtt caggcggagg tggctctggc    480

ggtggcggat cggacatcga gctcactcag tctccagcct ccctttctgc gtctgtggga    540

gaaactgtca ccatcacatg tcgagcaagt gggaatattc acaattattt agcatggtat    600

cagcagaaac agggaaaatc tcctcagctc ctggtctatt atacaacaac cttagcagat    660

ggtgtgccat caaggttcag tggcagtgga tcaggaacac aatattctct caagatcaac    720

agcctgcaac ctgaagattt tgggagttat tactgtcaac atttttggag tactcctcgg    780
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acgttcggtg gagggaccaa gctcgagatc aaacgggaac aaaaactcat ctcagaagag 840

gatctgaatt aataatgatc aaacggtaat aaggatccag ctcgaattc 889

<210> 185
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acids encoded by the nucleotide sequence around the cloning site in gene III of fd-CAT2

<400> 185

His Ser Ala Gln Val Gln Leu Gln Glu Leu Glu Ile Lys Arg Ala Ala
1 5 10 15

Ala Glu Thr Val
20

<210> 186
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence around the cloning site in gene III of fd-CAT 2

<400> 186
cacagtgcac aggtccaact gcaggagctc gagatcaaac gggcggccgc agaaactgtt 60

<210> 187
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of Fab D1.3 from genetically engineered anti-hen egg-white lysozyme (HEL) monoclonal antibody

<400> 187

Met Lys Tyr Leu Leu Pro Thr Ala Ala Ala Gly Leu Leu Leu Leu Ala
1 5 10 15

Ala Gln Pro Ala Met Ala Gln Val Gln Leu Gln Glu Ser Gly Pro Gly
20 25 30

Leu Val Ala Pro Ser Gln Ser Leu Ser Ile Thr Cys Thr Val Ser Gly
35 40 45

Phe Ser Leu Thr Gly Tyr Gly Val Asn Trp Val Arg Gln Pro Pro Gly
50 55 60

Lys Gly Leu Glu Trp Leu Gly Met Ile Trp Gly Asp Gly Asn Thr Asp
65 70 75 80

Tyr Asn Ser Ala Leu Lys Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser
85 90 95

Lys Ser Gln Val Phe Leu Lys Met Asn Ser Leu His Thr Asp Asp Thr
100 105 110

Ala Arg Tyr Tyr Cys Ala Arg Glu Arg Asp Tyr Arg Leu Asp Tyr Trp
115 120 125

Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
130 135 140

Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr
145 150 155 160

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
165 170 175

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
180 185 190

Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr
195 200 205

Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn
210 215 220

His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser
225 230 235 240

Ser

<210> 188

<211> 236
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of Fab D1.3 from genetically engineered anti-hen egg-white lysozyme (HEL) monoclonal antibody

<400> 188

Met Lys Tyr Leu Leu Pro Thr Ala Ala Ala Gly Leu Leu Leu Leu Ala
1 5 10 15

Ala Gln Pro Ala Met Ala Asp Ile Glu Leu Thr Gln Ser Pro Ala Ser
20 25 30

Leu Ser Ala Ser Val Gly Glu Thr Val Thr Ile Thr Cys Arg Ala Ser
35 40 45

Gly Asn Ile His Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys
50 55 60

Ser Pro Gln Leu Leu Val Tyr Tyr Thr Thr Thr Leu Ala Asp Gly Val
65 70 75 80

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Gln Tyr Ser Leu Lys
85 90 95

Ile Asn Ser Leu Gln Pro Glu Asp Phe Gly Ser Tyr Tyr Cys Gln His
100 105 110

Phe Trp Ser Thr Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
115 120 125

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
130 135 140

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
145 150 155 160

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
165 170 175

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
180 185 190

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
195 200 205

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
210 215 220

Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Ser
225 230 235

<210> 189
<211> 1526
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence of Fab D1.3 from genetically engineered anti-hen egg-white lysozyme (HEL) monoclonal antibody

<400> 189
gcatgcaaat tctatttcaa ggagacagtc ataatgaaat acctattgcc tacggcagcc 60

gctggattgt tattactcgc tgcccaacca gcgatggccc aggtgcagct gcaggagtca 120

ggacctggcc tggtggcgcc ctcacagagc ctgtccatca catgcaccgt ctcagggttc 180

tcattaaccg gctatggtgt aaactgggtt cgccagcctc caggaaaggg tctggagtgg 240

ctgggaatga tttggggtga tggaaacaca gactataatt cagctctcaa atccagactg 300

agcatcagca aggacaactc caagagccaa gttttcttaa aaatgaacag tctgcacact 360

gatgacacag ccaggtacta ctgtgccaga gagagagatt ataggcttga ctactggggc 420

caaggcacca cggtcaccgt ctcctcagcc tccaccaagg gcccatcggt cttccccctg 480

gcaccctcct ccaagagcac ctctgggggc acagcggccc tgggctgcct ggtcaaggac 540

tacttccccg aaccggtgac ggtgtcgtgg aactcaggcg ccctgaccag cggcgtgcac 600

accttcccgg ctgtcctaca gtcctcagga ctctactccc tcagcagcgt ggtgaccgtg 660

ccctccagca gcttgggcac ccagacctac atctgcaacg tgaatcacaa gcccagcaac 720

accaaggtcg acaagaaagt tgagcccaaa tcttcataat aacccgggag cttgcatgca 780

aattctattt caaggagaca gtcataatga aatacctatt gcctacggca gccgctggat 840

tgttattact cgctgcccaa ccagcgatgg ccgacatcga gctcacccag tctccagcct 900

ccctttctgc gtctgtggga gaaactgtca ccatcacatg tcgagcaagt gggaatattc 960

acaattattt agcatggtat cagcagaaac agggaaaatc tcctcagctc ctggtctatt 1020

atacaacaac cttagcagat ggtgtgccat caaggttcag tggcagtgga tcaggaacac 1080

aatattctct caagatcaac agcctgcagc ctgaagattt tgggagttat tactgtcaac 1140

atttttggag tactcctcgg acgttcggtg gaggcaccaa gctcgagatc aaacggactg 1200

tggctgcacc atctgtcttc atcttcccgc catctgatga gcagttgaaa tctggaactg 1260

cctctgttgt gtgcctgctg aataacttct atcccagaga ggccaaagta cagtggaagg 1320

tggataacgc cctccaatcg ggtaactccc aggagagtgt cacagagcag gacagcaagg 1380

acagcaccta cagcctcagc agcaccctga cgctgagcaa agcagactac gagaaacaca 1440

aagtctacgc ctgcgaagtc acccatcagg gcctgagctc gcccgtcaca aagagcttca 1500

accgcggaga gtcatagtaa gaattc 1526

<210> 190
<211> 249
<212> PRT
<213> Artificial Sequence

<220>
<223> scFv form of the anti-oxazalone antibody NQ11

<400> 190

Gln Val Gln Leu Gln Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Thr Ser Gly Phe Thr Phe Ser Asn Tyr
20 25 30

Tyr Met Gly Trp Val Arg Gln Pro Pro Gly Lys Ala Leu Glu Trp Leu
35 40 45

Gly Ser Val Arg Asn Lys Val Asn Gly Tyr Thr Thr Glu Tyr Ser Ala
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Phe Gln Ser Ile
65 70 75 80

Leu Tyr Leu Gln Ile Asn Thr Leu Arg Thr Glu Asp Ser Ala Thr Tyr
85 90 95

Tyr Cys Ala Arg Gly Tyr Asp Tyr Gly Ala Trp Phe Ala Tyr Trp Gly
100 105 110

```
Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
        115                 120                 125

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Glu Leu Thr Gln Thr Pro
    130                 135                 140

Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys Arg
145                 150                 155                 160

Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu Trp
                165                 170                 175

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys Val
            180                 185                 190

Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
        195                 200                 205

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Leu
    210                 215                 220

Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val Pro Tyr Thr Phe Gly
225                 230                 235                 240

Gly Gly Thr Lys Leu Glu Ile Lys Arg
                245
```

<210> 191
<211> 747
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence encoding scFv form of the anti-oxazalone antibody NQ11

<400> 191
caggtgcagc tgcaggagtc aggaggaggc ttggtacagc ctgggggttc tctgagactc 60

tcctgtgcaa cttctgggtt caccttcagt aattactaca tgggctgggt ccgccagcct 120

ccaggaaagg cacttgagtg gttgggttct gttagaaaca aagttaatgg ttacacaaca 180

gagtacagtg catctgtgaa ggggcggttc accatctcca gagataattt ccaaagcatc 240

ctctatcttc aaataaacac cctgagaact gaggacagtg ccacttatta ctgtgcaaga 300

ggctatgatt acggggcctg gtttgcttac tggggccaag ggaccctggt caccgtctcc 360

tcaggtggag gcggttcagg cggaggtggc tctggcggtg gcggatcgga catcgagctc 420

acccaaactc cactctccct gcctgtcagt cttggagatc aagcctccat ctcttgcaga 480

tctagtcaga gcattgtaca tagtaatgga aacacctatt tagaatggta cctgcagaaa 540

ccaggccagt ctccaaagct cctgatctac aaagtttcca accgattttc tggggtccca 600

gacaggttca gtggcagtgg atcggggaca gatttcacac tcaagatcag cagagtggag 660

gctgaggatc tgggagttta ttactgcttt caaggttcac atgttccgta cacgttcgga 720

gggggggacca agctcgagat caaacgg 747

<210> 192
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> amino terminus of phoAla 166

<400> 192

Arg Thr Pro Glu Met Pro Val Leu
1 5

<210> 193
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> 5' insertion site of phoAla 166 in frame to geneIII

<400> 193
tctcacagtg cacaaactgt tgaacggaca ccagaaatgc ctgttctg 48

<210> 194
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> carboxy terminus of phoAla 166

<400> 194

Lys Ala Ala Leu Gly Leu Lys
1 5

<210> 195

<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> 3' insertion site of phoAla 166 in frame to geneIII

<400> 195
aaagccgctc tggggctgaa agcggccgca gaaactgttg aaagt 45

<210> 196
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> amino terminus of scFv PCR product

<400> 196

Gln Val Gln Leu Gln Glu
1 5

<210> 197
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> carboxy terminus of scFv PCR product

<400> 197

Lys Leu Glu Ile Lys Arg
1 5

<210> 198
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> 5' end of scFv PCR product

<400> 198
tttaatgagg atccacaggt gcagctgcaa gag 33

<210> 199
<211> 27
<212> DNA
<213> Artificial Sequence

<220>

<223> 3' end of scFv PCR product

<400> 199
aagcttgaga tcaaacggga tccattc 27

<210> 200
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 200
gagggtggtg gctct 15

<210> 201
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 201
gagggtggcg gctct 15

<210> 202
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 202
gagggtggcg gctct 15

<210> 203
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 203
gagggtggcg gcact 15

<210> 204
<211> 15
<212> DNA

<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 204
gagggcggcg gctct 15

<210> 205
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 205
gagggtggtg gttct 15

<210> 206
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 206
gagggcggcg gctct 15

<210> 207
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 207
gagggcggcg gctct 15

<210> 208
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 208
gagggcggcg gttct 15

<210> 209
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 209
gagggcggcg gctct 15

<210> 210
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 210
gagggcggcg gttct 15

<210> 211
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 211
gagggcggcg gctct 15

<210> 212
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 212
gagggtggcg gatcc 15

<210> 213
<211> 11
<212> DNA
<213> Artificial Sequence

<220>
<223> site in geneIII for introduction of BamHI site via olgio G3 Bamlink

<400> 213

gagggtggcg g 11

<210> 214
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 214

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Thr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Asn Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Asn Arg Tyr Gly Ala Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 215
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 215

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Asp
20 25 30

Trp Met His Trp Leu Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Ser Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asn Tyr Gly Leu Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 216
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 216

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Val Met His Trp Val Lys Gln Lys Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Ser Asp Lys Ser Ser Ser Thr Ala Tyr

65 70 75 80

Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Ile Tyr Arg Ser Phe Pro Tyr Trp Gly Gln Gly Thr Thr Val Thr
100 105 110

Val Ser Ser
115

<210> 217
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 217

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
20 25 30

Phe Met Asn Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45

Gly Arg Ile Asn Pro Tyr Asn Gly Asp Thr Phe Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala His
65 70 75 80

Met Glu Leu Leu Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Val Gly Ile Thr Thr Arg Phe Ala Tyr Trp Gly Gln Gly Thr Thr Val
100 105 110

Thr Val Ser Ser
115

<210> 218
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 218

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Ala Pro Ser Gln
1 5 10 15

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Ser Tyr
20 25 30

Gly Val His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu
35 40 45

Gly Val Ile Trp Ala Gly Gly Ser Thr Asn Tyr Asn Ser Ala Leu Met
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65 70 75 80

Lys Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Met Tyr Tyr Cys Ala
85 90 95

Arg Asp Arg Gly Asp Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser
100 105 110

Ser

<210> 219
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 219

Gln Val Lys Leu Gln Gln Ser Gly Pro Glu Leu Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr

20 25 30

Leu Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Lys Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Ser Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Tyr Gly Tyr Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 220
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 220

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Ala
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Tyr
20 25 30

Leu Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Ser Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Glu Ala Thr Leu Thr Ala Asp Lys Ser Ser Asn Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Tyr Gly Tyr Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 221
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 221

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu His Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Ser Arg Asn
20 25 30

Tyr Met His Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Ala Pro Phe Asn Gly Gly Thr Thr Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Val Asp Arg Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met His Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Thr Asp Tyr Gly Arg Asp Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 222
<211> 114
<212> PRT

<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 222

Gln Val Lys Leu Gln Gln Ser Gly Pro Glu Leu Ala Arg Pro Gly Val
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Ala Met His Trp Val Lys Gln Ser Gln Ser Lys Ser Leu Glu Trp Ile
35 40 45

Gly Val Ile Ser Thr Tyr Asn Gly Asn Thr Asn Tyr Asn Gln Lys Phe
50 55 60

Lys Gly Lys Ala Thr Met Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ala Arg Leu Thr Ser Glu Asp Ser Ala Ile Tyr Tyr Cys
85 90 95

Ala Arg Asp Tyr Gly Asp Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 223
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 223

Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Tyr
20 25 30

```
Thr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Asn Tyr Asn Gln Lys Phe
    50                  55                  60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Arg Gly Ala Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
            100                 105                 110

Ser Ser
```

<210> 224
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 224

```
Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly Ala
1               5                   10                  15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Asp
            20                  25                  30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Tyr Ile Asn Pro Ser Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
    50                  55                  60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85                  90                  95
```

Ala Arg Asn Tyr Gly Leu Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 225
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 225

Gln Val Gln Leu Gln Gln Ser Gly Leu Glu Leu Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Leu Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Ser Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Tyr Gly Tyr Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 226
<211> 114
<212> PRT
<213> Artificial Sequence

<220>

<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 226

Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Ser Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Asp Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Tyr Gly Tyr Phe Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 227
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 227

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Thr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

```
Gly Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Asn Tyr Asn Gln Lys Phe
    50                  55                  60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Tyr Gly Tyr Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
            100                 105                 110

Ser Ser
```

<210> 228
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 228

```
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly Ala
1               5                   10                  15

Ser Val Lys Met Ser Cys Glu Ala Ser Gly Tyr Thr Phe Thr Ser His
            20                  25                  30

Leu Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Tyr Ile Asn Pro Arg Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
    50                  55                  60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Tyr Gly Ala Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
            100                 105                 110
```

Ser Ser

<210> 229
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 229

Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Ser Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Tyr Gly Tyr Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 230
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 230

```
Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly Ala
1               5                   10                  15

Ser Val Lys Met Ser Cys Lys Ala Thr Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Leu Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Tyr Ile Asn Pro Ser Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
    50                  55                  60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Tyr Gly Tyr Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
            100                 105                 110

Ser Ser
```

<210> 231
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 231

```
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly Ala
1               5                   10                  15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Val Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Asn Tyr Asn Gln Lys Phe
    50                  55                  60
```

```
Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asn Tyr Gly Ile Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
            100                 105                 110

Ser Ser
```

<210> 232
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 232

```
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly Ala
1               5                   10                  15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Thr Phe
            20                  25                  30

Leu Met His Trp Leu Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Tyr Ile Asn Pro Ser Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
    50                  55                  60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Tyr Gly Tyr Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
            100                 105                 110

Ser Ser
```

<210> 233
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 233

Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Thr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Gly Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Asn Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Tyr Gly Tyr Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 234
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 234

Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Thr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Thr Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Tyr Gly Tyr Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 235
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> VH of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 235

Gln Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Asp
20 25 30

Trp Met His Trp Leu Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Ser Thr Gly Tyr Thr Glu Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr

65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asn Tyr Gly Tyr Tyr Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser

<210> 236
<211> 109
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 236

Asp Ile Glu Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
1 5 10 15

Glu Arg Val Ser Leu Thr Cys Arg Ala Ser Gln Glu Ile Ser Ser Gly
20 25 30

Tyr Leu Ser Trp Leu Gln Gln Lys Pro Asp Gly Ser Ile Lys Arg Leu
35 40 45

Ile Tyr Ala Ala Ser Thr Leu Glu Ser Gly Val Pro Lys Arg Phe Ser
50 55 60

Gly Ser Arg Ser Gly Ser Asp Tyr Ser Leu Thr Ile Ser Ser Leu Glu
65 70 75 80

Ser Glu Asp Phe Ala Asp Tyr Tyr Cys Leu Gln Tyr Ala Ser Tyr Pro
85 90 95

Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105

<210> 237
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 237

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Arg Ala Ser Ser Ser Val Ser Ser Ser
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Ala Ser Pro Lys Val Trp
35 40 45

Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Val Glu
65 70 75 80

Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Gly Tyr Pro
85 90 95

Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 238
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 238

Asp Ile Glu Leu Thr Gln Ser Pro Thr Thr Met Ala Ala Ser Pro Gly
1 5 10 15

Glu Lys Ile Thr Ile Thr Cys Ser Ala Ser Ser Ser Ile Ser Ser Asn
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Phe Ser Pro Lys Leu Leu
35 40 45

Ile Tyr Arg Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser

50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Gly Thr Met Glu
65 70 75 80

Ala Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Gly Ser Thr Ile Pro
85 90 95

Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 239
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 239

Asp Ile Glu Leu Thr Gln Ser Pro Thr Thr Met Ala Ala Ser Pro Gly
1 5 10 15

Glu Lys Ile Thr Ile Thr Cys Ser Ala Ser Ser Ser Ile Ser Ser Asn
20 25 30

Tyr Leu His Trp Phe Gln Gln Lys Pro Gly Phe Ser Pro Lys Leu Leu
35 40 45

Ile Ser Arg Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Gly Thr Met Glu
65 70 75 80

Ala Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Gly Ser Thr Ile Pro
85 90 95

Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 240
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 240

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Ile Thr Cys Ser Ala Ser Ser Ser Val Asn Tyr Met
20 25 30

His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Leu Trp Ile Tyr
35 40 45

Arg Thr Ser Asn Leu Ala Ser Gly Val Pro Thr Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Pro Thr
85 90 95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105

<210> 241
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 241

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Phe Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Ser Gly Thr Ser Pro Lys Arg Trp Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser

50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Phe Ser Ser Asn Pro Leu Thr
85 90 95

Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ala
100 105

<210> 242
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 242

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Ile Asn Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Ala Ser Pro Lys Arg Trp Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys His Gln Arg Ser Ser Tyr Pro Trp Thr
85 90 95

Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105

<210> 243
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 243

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Ser Gly Thr Ser Pro Lys Arg Trp Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr
85 90 95

Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105

<210> 244
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 244

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Ile Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Ile
20 25 30

His Trp Pro Gln Gln Lys Pro Gly Thr Ser Pro Lys Leu Trp Ile Tyr
35 40 45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser

50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Tyr His Ser Tyr Pro Leu Thr
85 90 95

Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105

<210> 245
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 245

Asp Ile Glu Leu Thr Gln Ser Pro Thr Thr Met Ala Ala Ser Pro Gly
1 5 10 15

Glu Lys Ile Thr Ile Thr Cys Ser Ala Ser Ser Ser Ile Ser Ser Asn
20 25 30

Tyr Leu His Trp Phe Gln Gln Lys Pro Gly Phe Ser Pro Lys Leu Leu
35 40 45

Ile Tyr Arg Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Gly Thr Met Glu
65 70 75 80

Ala Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Gly Ser Ser Ile Pro
85 90 95

Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 246
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 246

Asp Ile Glu Leu Thr Gln Ser Pro Thr Thr Met Ala Ala Ser Pro Gly
1 5 10 15

Glu Met Ile Thr Ile Thr Cys Ser Ala Ser Ser Ser Ile Ser Ser Asn
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Phe Ser Pro Lys Leu Leu
35 40 45

Ile Tyr Arg Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Gly Ala Met Glu
65 70 75 80

Ala Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Gly Ser Ser Ile Pro
85 90 95

Tyr Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 247
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 247

Asp Ile Glu Leu Thr Gln Ser Pro Thr Thr Met Ala Ala Ser Pro Gly
1 5 10 15

Glu Lys Ile Thr Ile Thr Cys Ser Ala Ser Ser Ser Ile Ser Ser Asn
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Phe Ser Pro Lys Leu Leu
35 40 45

Ile Tyr Arg Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser

50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Gly Thr Met Glu
65 70 75 80

Ala Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Gly Ser Ser Ile Pro
85 90 95

Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 248
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 248

Asp Ile Glu Leu Thr Gln Ser Pro Thr Thr Met Ala Ala Ser Pro Gly
1 5 10 15

Glu Lys Ile Thr Ile Thr Cys Ser Ala Ser Ser Ser Ile Ser Ser Asn
20 25 30

His Leu His Trp Tyr Gln Gln Lys Pro Gly Phe Ser Pro Lys Leu Leu
35 40 45

Ile Tyr Arg Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Gly Thr Met Glu
65 70 75 80

Ala Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Gly Ser Gly Ile Pro
85 90 95

Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 249
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 249

Asp Ile Glu Leu Thr Gln Ser Pro Thr Thr Met Ala Ala Ser Pro Gly
1 5 10 15

Glu Lys Ile Thr Ile Thr Cys Ser Ala Ser Ser Ser Ile Ser Ser Asn
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Phe Ser Pro Lys Leu Leu
35 40 45

Ile Tyr Arg Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Gly Thr Met Glu
65 70 75 80

Ala Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Gly Ser Ser Ile Pro
85 90 95

Phe Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 250
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 250

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Ile Thr Ile Thr Cys Ser Ala Ser Ser Ser Ile Ser Ser Asn
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Phe Ser Pro Lys Leu Leu
35 40 45

Ile Tyr Arg Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser

50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Gly Thr Met Glu
65 70 75 80

Ala Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Gly Ser Ser Ile Pro
85 90 95

Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 251
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 251

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Ser Gly Thr Ser Pro Lys Arg Trp Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu
65 70 75 80

Asp Val Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr
85 90 95

Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105

<210> 252
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 252

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Leu Thr Cys Ser Ala Ser Ser Ser Val Arg Tyr Val
20 25 30

Asn Trp Phe Gln Gln Lys Ser Gly Thr Ser Pro Lys Arg Trp Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Thr Ser Asn Pro Pro Thr
85 90 95

Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105

<210> 253
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 253

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Ser Gly Thr Ser Pro Lys Arg Trp Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser

50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Thr Asn Ala Leu Thr
85 90 95

Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105

<210> 254
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 254

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Thr Ser Asn
20 25 30

Tyr Leu Asn Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Lys Leu Trp
35 40 45

Val Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Val Glu
65 70 75 80

Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Gly Tyr Pro
85 90 95

Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 255
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 255

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Asn
20 25 30

Tyr Leu Asn Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Lys Leu Trp
35 40 45

Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu
65 70 75 80

Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro
85 90 95

Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 256
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 256

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Asn
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Lys Leu Trp
35 40 45

Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser

50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Val Glu
65 70 75 80

Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Gly Tyr Pro
85 90 95

Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 257
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 257

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Asn
20 25 30

Tyr Leu His Trp Phe Gln Gln Lys Ser Gly Ala Ser Pro Lys Leu Trp
35 40 45

Ile Tyr Ser Thr Ser Asn Leu Pro Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Val Glu
65 70 75 80

Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Gly Tyr Pro
85 90 95

Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 258
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL of scFv from mouse immunized with 2-phenyl-5-oxazolone

<400> 258

Asp Ile Glu Leu Thr Gln Ser Pro Thr Thr Met Ala Ala Ser Pro Gly
1 5 10 15

Glu Lys Ile Thr Ile Thr Cys Ser Ala Ser Ser Ser Ile Ser Ser Asn
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Phe Ser Pro Lys Leu Leu
35 40 45

Ile Tyr Arg Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Gly Thr Met Glu
65 70 75 80

Ala Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Gly Ser Ser Ile Pro
85 90 95

Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala
100 105 110

<210> 259
<211> 41
<212> PRT
<213> Artificial Sequence

<220>
<223> residues encoded by insertion site and surrounding sequence in pH
EN1

<400> 259

Leu Leu Ala Ala Gln Pro Ala Met Ala Gln Val Gln Leu Gln Val Asp
1 5 10 15

Leu Glu Ile Lys Arg Ala Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu
20 25 30

Asp Leu Asn Gly Ala Ala Thr Val Glu
35 40

<210> 260
<211> 126
<212> DNA
<213> Artificial Sequence

<220>
<223> insertion site and surrounding sequence in pHEN1

<400> 260
ttactcgcgg cccagccggc catggcccag gtgcagctgc aggtcgacct cgagatcaaa 60

cgggcggccg cagaacaaaa actcatctca gaagaggatc tgaatggggc cgcatagact 120

gttgaa 126

<210> 261
<211> 734
<212> PRT
<213> Artificial Sequence

<220>
<223> scFvB18

<400> 261

Pro His Glu Thr Tyr Arg Ser Glu Arg His Ile Ser Ser Glu Arg Ala
1 5 10 15

Leu Ala Gly Leu Asn Val Ala Leu Gly Leu Asn Leu Glu Gly Leu Asn
20 25 30

Gly Leu Asn Ser Glu Arg Gly Leu Tyr Ala Leu Ala Gly Leu Leu Glu
35 40 45

Val Ala Leu Leu Tyr Ser Pro Arg Gly Leu Tyr Ala Leu Ala Ser Glu
50 55 60

Arg Val Ala Leu Leu Tyr Ser Leu Glu Ser Glu Arg Cys Tyr Ser Leu
65 70 75 80

Tyr Ser Ala Leu Ala Ser Glu Arg Gly Leu Tyr Thr Tyr Arg Thr His
85 90 95

Arg Pro His Glu Thr His Arg Ser Glu Arg Thr Tyr Arg Thr Arg Pro
100 105 110

Met Glu Thr His Ile Ser Thr Arg Pro Val Ala Leu Leu Tyr Ser Gly
115 120 125

```
Leu Asn Ala Arg Gly Pro Arg Gly Leu Tyr Ala Arg Gly Gly Leu Tyr
    130                 135                 140

Leu Glu Gly Leu Thr Arg Pro Ile Leu Glu Gly Leu Tyr Ala Arg Gly
145                 150                 155                 160

Ile Leu Glu Ala Ser Pro Pro Arg Ala Ser Asn Ser Glu Arg Gly Leu
                165                 170                 175

Tyr Gly Leu Tyr Thr His Arg Leu Tyr Ser Thr Tyr Arg Ala Ser Asn
            180                 185                 190

Gly Leu Leu Tyr Ser Pro His Glu Leu Tyr Ser Ser Glu Arg Leu Tyr
        195                 200                 205

Ser Ala Leu Ala Thr His Arg Leu Glu Thr His Arg Val Ala Leu Ala
    210                 215                 220

Ser Pro Leu Tyr Ser Pro Arg Ser Glu Arg Ser Glu Arg Thr His Arg
225                 230                 235                 240

Ala Leu Ala Thr Tyr Arg Met Glu Thr Gly Leu Asn Leu Glu Ser Glu
                245                 250                 255

Arg Ser Glu Arg Leu Glu Thr His Arg Ser Glu Arg Gly Leu Ala Ser
            260                 265                 270

Pro Ser Glu Arg Ala Leu Ala Val Ala Leu Thr Tyr Arg Thr Tyr Arg
        275                 280                 285

Cys Tyr Ser Ala Leu Ala Ala Arg Gly Thr Tyr Arg Ala Ser Pro Thr
    290                 295                 300

Tyr Arg Gly Leu Tyr Ser Glu Arg Ser Glu Arg Thr Tyr Arg Thr Tyr
305                 310                 315                 320

Arg Pro His Glu Ala Ser Pro Thr Tyr Arg Thr Arg Pro Gly Leu Tyr
                325                 330                 335

Gly Leu Asn Gly Leu Tyr Thr His Arg Thr His Arg Val Ala Leu Thr
            340                 345                 350
```

```
His Arg Val Ala Leu Ser Glu Arg Ser Glu Arg Gly Leu Tyr Gly Leu
        355                 360                 365

Tyr Gly Leu Tyr Gly Leu Tyr Ser Glu Arg Gly Leu Tyr Gly Leu Tyr
    370                 375                 380

Gly Leu Tyr Gly Leu Tyr Ser Glu Arg Gly Leu Tyr Gly Leu Tyr Gly
385                 390                 395                 400

Leu Tyr Gly Leu Tyr Ser Glu Arg Gly Leu Asn Ala Leu Ala Val Ala
                405                 410                 415

Leu Gly Leu Tyr Thr His Arg Gly Leu Asn Gly Leu Ser Glu Arg Ala
            420                 425                 430

Leu Ala Leu Glu Thr His Arg Thr His Arg Ser Glu Arg Pro Arg Gly
        435                 440                 445

Leu Tyr Gly Leu Thr His Arg Val Ala Leu Thr His Arg Leu Glu Thr
    450                 455                 460

His Arg Cys Tyr Ser Ala Arg Gly Ser Glu Arg Ser Glu Arg Thr His
465                 470                 475                 480

Arg Gly Leu Tyr Ala Leu Ala Val Ala Leu Thr His Arg Thr His Arg
                485                 490                 495

Ser Glu Arg Ala Ser Asn Thr Tyr Arg Ala Leu Ala Ala Ser Asn Thr
            500                 505                 510

Arg Pro Val Ala Leu Gly Leu Asn Gly Leu Leu Tyr Ser Pro Arg Ala
        515                 520                 525

Ser Pro His Ile Ser Leu Glu Pro His Glu Thr His Arg Gly Leu Tyr
    530                 535                 540

Leu Glu Ile Leu Glu Gly Leu Tyr Gly Leu Tyr Thr His Arg Ala Ser
545                 550                 555                 560

Asn Ala Ser Asn Ala Arg Gly Ala Leu Ala Pro Arg Gly Leu Tyr Val
                565                 570                 575

Ala Leu Pro Arg Ala Leu Ala Ala Arg Gly Pro His Glu Ser Glu Arg
```

580 585 590

Gly Leu Tyr Ser Glu Arg Leu Glu Ile Leu Glu Gly Leu Tyr Ala Ser
595 600 605

Pro Leu Tyr Ser Ala Leu Ala Ala Leu Ala Leu Glu Thr His Arg Ile
610 615 620

Leu Glu Thr His Arg Gly Leu Tyr Ala Leu Ala Gly Leu Asn Thr His
625 630 635 640

Arg Gly Leu Ala Ser Pro Gly Leu Ala Leu Ala Ile Leu Glu Thr Tyr
645 650 655

Arg Pro His Glu Cys Tyr Ser Ala Leu Ala Leu Glu Thr Arg Pro Thr
660 665 670

Tyr Arg Ser Glu Arg Ala Ser Asn His Ile Ser Thr Arg Pro Val Ala
675 680 685

Leu Pro His Glu Gly Leu Tyr Gly Leu Tyr Gly Leu Tyr Thr His Arg
690 695 700

Leu Tyr Ser Leu Glu Thr His Arg Val Ala Leu Leu Glu Gly Leu Ile
705 710 715 720

Leu Glu Leu Tyr Ser Ala Arg Gly Ala Leu Ala Ala Leu Ala
725 730

<210> 262
<211> 770
<212> DNA
<213> Artificial Sequence

<220>
<223> scFvB18

<400> 262
ttctattctc acagtgcaca ggtccagctg cagcagtctg gggctgagct tgtgaagcct 60

ggggcttcag tgaagctgtc ctgcaaggct tctggctaca ccttcaccag ctactggatg 120

cactgggtga agcagaggcc tggacgaggc cttgagtgga ttggaaggat tgatcctaat 180

agtggtggta ctaagtacaa tgagaagttc aagagcaagg ccacactgac tgtagacaaa 240

ccctccagca cagcctacat gcagctcagc agcctgacat ctgaggactc tgcggtctat 300

tattgtgcaa gatacgacta cggtagtagc tactactttg actactgggg ccaagggacc 360

acggtcaccg tctcctcagg tggaggcggt tcaggcggag gtggctctgg cggtggcgga 420

tcccaggctg ttgggacaca ggaatctgca ctcaccacat cacctggtga aacagtcaca 480

ctcacttgtc gctcaagtac tggggctgtt acaactagta actatgccaa ctgggtccaa 540

gaaaaaccag atcatttatt cactggtcta ataggtggta ccaacaaccg agctccaggt 600

gttcctgcca gattctcagg ctccctgatt ggagacaagg ctgccctcac catcacaggg 660

gcacagactg aggatgaggc aatatatttc tgtgctctat ggtacagcaa ccattgggtg 720

ttcggtggag gaaccaaact gactgtcctc gagatcaaac gggcggccgc 770

<210> 263
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> carboxy terminus of Hman CH1 and hinge from pJM1-Fab D1.3

<400> 263

Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Ser
1 5 10 15

Thr Lys Thr His Thr Ser Gly Gly Glu Gln Lys Leu Ile Ser Glu Glu
20 25 30

Asp Leu Asn
35

<210> 264
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> pelB leader and amino terminus of VK from pJM1-Fab D1.3

<400> 264

Met Lys Tyr Leu Leu Pro Thr Ala Ala Ala Gly Leu Leu Leu Pro Ala
1 5 10 15

Ala Gln Pro Ala Met Ala Asp Ile Glu Phe Thr Gln Ser Pro
20 25 30

<210> 265
<211> 241
<212> DNA
<213> Artificial Sequence

<220>
<223> linker region of pJM1-Fab D1.3

<400> 265
aaccccagca acaccaaggt cgacaagaaa gttgagccca aatcttcaac taagacgcac 60

acatcaggag gtgaacagaa gctcatctca gaagaggatc tgaattaata agggagcttg 120

catgcaaatt ctatttcaag gagacagtca taatgaaata cctattgcct acggcagccg 180

ctggattgtt attacctgct gcccaaccag cgatggccga catcgagttc acccagtctc 240

c 241

<210> 266
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> light chain of D1.3

<400> 266

Asp Ile Gln Met Thr Gln Ser Pro Ala Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Glu Thr Val Thr Ile Thr Cys Arg Ala Ser Gly Asn Ile His Asn Tyr
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
35 40 45

Tyr Tyr Thr Thr Thr Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Gln Tyr Ser Leu Lys Ile Asn Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Gly Ser Tyr Tyr Cys Gln His Phe Trp Ser Thr Pro Arg
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
100 105

<210> 267
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> light chain from clone M1F

<400> 267

Asp Ile Glu Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
1 5 10 15

Glu Arg Val Ser Leu Thr Cys Arg Ala Ser Gln Asp Ile Gly Ser Ser
20 25 30

Leu Asn Trp Leu Gln Gln Glu Pro Asp Gly Thr Ile Lys Arg Leu Ile
35 40 45

Tyr Ala Thr Ser Ser Leu Asp Ser Gly Val Pro Lys Arg Phe Ser Gly
50 55 60

Ser Arg Ser Gly Ser Asp Tyr Ser Leu Thr Ile Ser Ser Leu Glu Ser
65 70 75 80

Glu Asp Phe Val Asp Tyr Tyr Cys Leu Gln Tyr Ala Ser Ser Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Leu Lys Arg
100 105

<210> 268
<211> 109
<212> PRT
<213> Artificial Sequence

<220>
<223> light chain from M21

<400> 268

Asp Ile Glu Leu Thr Gln Ser Pro Ala Leu Met Ala Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Ile Thr Cys Ser Val Ser Ser Ser Ile Ser Ser Ser
20 25 30

```
Asn Leu His Trp Tyr Gln Gln Lys Ser Glu Thr Ser Pro Lys Pro Trp
        35                  40                  45

Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Val Arg Phe Ser
    50                  55                  60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu
65                  70                  75                  80

Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Tyr Pro
                85                  90                  95

Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg
            100                 105
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<210> 269
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> linker between VH-HuH2 and VK-HuK3

<400> 269

```
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1               5                   10                  15
```

<210> 270
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> linker between VH-HuH1 and VK-HuK4

<400> 270

```
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1               5                   10                  15
```

<210> 271
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> linker between VH-HuH2 and VK-HuK4

<400> 271

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 272
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> linker between VH-HuH1 and VK-HuK3

<400> 272

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15